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ABSTRACT

A survey of manufacturers was conducted by the National Association of Manufacturers (NAM) and the National Center for Research in Vocational Education to elicit the views of NAM members about vocational education--the effectiveness of vocational education, the collaborative activities between manufacturers and vocational education, and manufacturers' suggestions for improvement of vocational education. Two thousand NAM members were randomly selected and mailed the survey, with a 40 percent response. Analysis of their responses yielded the following findings: (1) most manufacturers gave secondary vocational education a "C" grade and gave postsecondary vocational education a "B" grade; (2) more than 50 percent of the respondents indicated that their company benefited from vocational education, and about 85 percent prefer hiring vocational graduates rather than nonvocational graduates for a job requiring less than a four-year college degree; (3) companies, especially large companies involved with vocational eudcation, rated it more satisfactory than companies not involved; (4) many manufacturers are willing to provide work experience programs for students; (5) manufacturers thought both job skills training and employability skills training need to be taught at the high school level; (6) they thought basics should be emphasized and that more employability skills should be taught in high school, and more courses should be offered, for adults as well as young people, at the postsecondary level; (7) the manufacturers did not favor increased spending of public funds for job placement or for training in nontraditional occupations. In general, the survey analysis concluded that vocational education is perceived as doing well and as being beneficial to employers and that they would be willing to help vocational education be more effective. (KC)

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MANUFACTURERS' VIEWS OF VOCATIONAL EDUCATION

by
Ann R. Nuñez
Jill Frymier Russell

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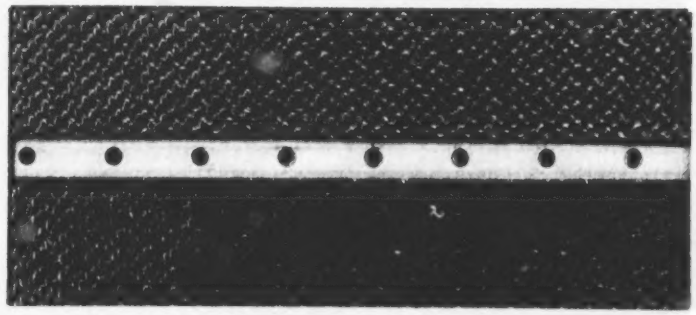

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- Developing educational programs and products
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- Providing information for national planning and policy
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- Operating information systems and services
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FOREWORD

The business and industrial world faces daily challenges from the demands of technological innovation and changes in the economy and in the labor force. Vocational education must also deal with these events, satisfying the needs of individual students, employers, and society.

This report describes manufacturers' views about vocational education. As one type of employer, manufacturers are in a position to benefit from vocational education, and vocational educators in turn, need to learn what employers think about changing skill requirements, labor demands, and related issues. The information in this report is organized to help policymakers both in industry and education as they consider such concerns as collaboration, retraining of adult workers, the preparation of young people for work, and the outcomes of vocational education.

The National Center, under contract with the Office of Vocational and Adult Education of the U.S. Department of Education, collaborated in a survey effort with the National Association of Manufacturers (NAM). A sampling of the membership of that organization generously shared their opinions about various aspects of vocational education.

William Bartolone, Associate Director for Human Resources and Equal Opportunity with the National Association of Manufacturers, directed activities within NAM. Alexander Trowbridge, President of NAM, was most cooperative, and William Blasier, General Counsel, provided timely assistance. Tanya Herrell organized mailing materials, names and addresses, and handled the completed surveys. Harry Ganjian of NAM's computer operations coordinated the sample selection from the overall membership list.

Ann Nuñez, Research Specialist, assisted by Jill Frymier Russell, Program Associate, directed the technical assistance effort of the National Center. Morgan Lewis, Program Director, and N. L. McCaslin, Division Director, provided advice and suggestions throughout the project. Arthur Lee with the National Center's liaison office originally made contact with the National Association of Manufacturers. Typing services were provided by Deborah Anthony, Kathie Medley, and Bernice DeHart. Jack McElroy of The University of Kentucky and Gale Zahniser of the National Center reviewed the document prior to publication. Final edit

was done by Brenda Sessley of the National Center editorial staff. Their assistance and suggestions for improvement are greatly appreciated.

Robert E. Taylor
Executive Director
The National Center for Research
in Vocational Education

EXECUTIVE SUMMARY

A survey of manufacturers was conducted jointly by the National Association of Manufacturers (NAM) and the National Center for Research in Vocational Education. The intent of the survey was to elicit the views of NAM members about vocational education--the effectiveness of vocational education, the collaborative activities between manufacturers and vocational education, and manufacturers' suggestions for improvement of vocational education.

Two thousand NAM members were randomly selected and mailed the survey. They represented firms of various size, industrial activity, and geographic region. Almost 40 percent of the sample responded to the survey. The analysis of their responses yielded the following findings and conclusions.

Findings

The findings are presented as they relate to the key topics addressed by the survey.

Opinions About Vocational Education

1. The most frequent grade awarded to secondary vocational education (on a scale of A, B, C, D, and Fail) by manufacturers was a "C." For postsecondary vocational education, the most frequent grade was a "B."

2. Over 50 percent of the respondents indicated that their company benefited from vocational education. Almost 40 percent believed that vocational education lowered their company's training costs, and 60 percent said vocational education graduates need less training than other new employees in similar positions.

3. Most manufacturers, 85 percent, prefer hiring vocational graduates rather than nonvocational graduates (all else being equal) for a job requiring less than a four-year college degree.

4. In general, those respondents whose companies are currently involved in joint activities with vocational education grade the effectiveness of vocational education higher than those whose companies are not involved. Large companies tend to be more involved and more satisfied with vocational education than small companies.

Involvement with Vocational Education

5. Manufacturers' willingness to engage in cooperative activities is generally high.

6. Of several possible forms of collaboration between vocational education and manufacturers, providing work experience for students is most preferred by manufacturers. Allowing company equipment to be used on site by vocational students is least preferred.

7. The problems in collaboration mentioned most often by manufacturers included inadequacy of planning, inflexibility of scheduling, and quality of training.

What Vocational Education Should Be Doing

8. Three-fourths of the responding manufacturers prefer that both employability skills training and job skills training be offered at the high school level. They see this as the most effective mode of preparing youth for work and prefer this option to offering only employability skills training or specific job skills training alone.

9. To improve vocational education, manufacturers thought the following should be emphasized: teach the basics (reading, writing, and arithmetic) at both the secondary and postsecondary levels, provide work experience for students at the postsecondary level, and ensure that noncollege bound students have access to vocational education.

10. When considering suggestions for change in vocational education manufacturers agreed there was a need for more employability skills training at the high school level, for more course offerings at the postsecondary level, for increased employer involvement in the evaluation of vocational education, and for adults to have access to training for reentry skills for the job market.

11. The suggested changes with which manufacturers were most likely to disagree were increasing public funds for job placement programs as a part of vocational education and providing public funds for expansion of vocational programs for nontraditional occupations.

Conclusions

On the basis of the findings of the survey, there are some general conclusions and inferences that can be drawn.

1. Vocational education is generally perceived as doing well and as being beneficial to employers. Post-secondary vocational education, particularly, is seen as meeting the needs of manufacturers.

2. Vocational education graduates appear to have an advantage in obtaining employment for jobs requiring less than a four-year college degree.

3. In general manufacturers are quite amenable to helping vocational education be more effective, and they would like to be more involved in evaluating vocational education. Indeed, the positive relationship between manufacturers' perceived benefits and their involvement with vocational education suggests that both manufacturers and vocational educators might profit from greater involvement of business executives in the planning, conduct, or evaluation of vocational education.

   Methods to ease the major problems of collaboration indicated by manufacturers (inadequacy of planning, inflexibility of scheduling, quality of training, non-interest of schools) can be developed by vocational educators and manufacturers working together. Some types of collaboration are more popular than others, e.g., work experience versus sharing of on-site equipment. However, there appears to be considerable latitude for vocational educators to develop collaborative activities, considering that the employers' expressed willingness to engage in these arrangements far surpasses their actual involvement.

4. Many manufacturers believe that the young population's mastery of reading, writing, and computing skills is unsatisfactory. Basic skills, employability skills, and occupational skills are all seen by manufacturers as important employee attributes. They regard each skill area as vital to the preparation of youth for work and do not perceive them as mutually exclusive. Perhaps manufacturers' positive view toward work experience and their willingness to provide it arise because such experience inherently includes the application and practice of basic employability and occupational skills.

5. Manufacturers support vocational education opportunities for noncollege bound youth and for adults needing retraining. Establishing special opportunities for

minorities providing nontraditional (according to sex) occupational training, and increasing public funds for job placement services in vocational education were less likely to be endorsed. These views may reflect perceived benefits and costs (to the firm) associated with each.

6. The manufacturers want adults to have access to retraining, and 65 percent are or would be willing to use vocational education to retrain their own experienced workers; yet they do not suggest that vocational education should increase collaborative retraining efforts.

INTRODUCTION

This study represents a joint effort of the National Association of Manufacturers (NAM) and the National Center for Research in Vocational Education to assess the attitudes of employers toward vocational education. The study queried employers about their contacts with vocational education programs in their localities and asked their suggestions for improvement of these programs.

The National Association of Manufacturers (NAM) is an organization established to promote America's economic growth and productivity, particularly in the manufacturing sector, by developing and advocating sound industrial practices and effective government policies at the national level. Its members consist of both large and small firms.

Effectiveness of Vocational Education

One typical area of concern to any employer is the availability of skilled workers. Accordingly, NAM has an historical involvement with this concern, as exemplified in its efforts to keep abreast of trends and developments in education and training systems that produce skilled workers. Vocational education, which has devoted much of its efforts to the development of a skilled labor force serving the needs of both employers and students, has traditionally garnered much attention from NAM.

However, as evidenced in follow-up studies of vocational graduates, questions relating to future directions in vocational education are difficult to resolve, especially when results are conflicting and confusing. This study therefore, represents an attempt to understand employers' perceptions and expectations of vocational education and to explore ways to increase employer involvement in the preparation of young people for employment.

A function assigned to the National Center is to assemble and provide information about vocational education for national planning and policy development. One way to carry out this function has been to establish cooperative arrangements with organizations that have an interest in vocational education. These arrangements have entailed assisting in the surveying of their members' views of vocational education. The result of one such arrangement is this study conducted by NAM and the National Center.

Key Topics

Several key topics provided structure to the survey of NAM members' opinions about vocational education. The topics emerged from an analysis highlighting important developments and information needs in business, industry, and vocational education in the eighties (Gallup 1979; Lewis and Russell 1980; Lewis, McElwain, and Fornash 1980; Mertens et al. 1980; Nuñez, Puleo, and Mertens 1980; Ruff, Shylo, and Russell 1981). Key topics include: opinions about vocational education, including perceptions about outcomes or effects of vocational education; involvement with vocational education; and views about what vocational education should be doing and how it can be improved.

A survey form was developed to gather manufacturers' opinions about the key topics (see Apendix). Details of the method used to select and contact representative members of NAM are presented in the next section.

METHOD

Design of the Sample

The sample for this survey consisted of 2,000 active NAM member firms. During the months of July and August 1981 the study participants were mailed a first form and if necessary a follow-up form and were asked to complete and send the form to NAM. The stratified random sample was selected to represent companies of varied size, varied Standard Industrial Classification (SIC) code, and geographic regions. Respondents' answers were based on the entire firm if there was only a single facility, and on the largest plant if there were several facilities comprising their firm.

The Respondents

Almost 40 percent (775) of those receiving the survey completed and returned it to NAM. Forty percent of the persons completing the survey identified themselves as the president or chief executive officer of their firms (see table 1).

TABLE 1

PERSON COMPLETING THE SURVEY

Position or Title	Percentage
President or CEO	40
V-P Industrial Relations	12
Personnel Manager	20
Human Resource Director	6
Employment and Training Manager	3
Other	19
Missing	1

Description of the Sample

Respondents were asked to indicate the approximate number of employees in their firm, the Standard Industrial Classification (SIC) code number describing the major activity of their business establishment, and the state where their firm is located. Table 2 presents these data for manufacturers in general, for NAM members, and for the sample respondents.

TABLE 2

DESCRIPTION OF U.S. MANUFACTURERS, NAM MEMBERS, AND SAMPLE RESPONDENTS BY PERCENTAGE

	U.S. Manufacturers	NAM Members	Sample Respondents
Number of Employees			
Under 20	65	7	3
20-99	24	38	33
100-249	7	22	22
250-999	4	18	26
1000+	1	15	16
Missing	0	0	1
Standard Industrial Classification (SIC) Codes			
20. Food and Kindred	10	(not	3
21. Tobacco	0	available)	1
22. Textile Mill	2		1
23. Apparel	8		1
24. Lumber & Wood	12		1
25. Furniture	3		1
26. Paper	2		1
27. Printing	12		1
28. Chemical	4		3
29. Petrol & Coal	1		0
30. Rubber & Plastic	2		2
31. Leather	1		1
32. Stone, Clay, Glass	2		2
33. Primary Metal	2		4
34. Fabricated Metal	9		13
35. Machinery	12		9
36. Electrical Equipment	3		3
37. Trans Equipment	2		3
38. Instruments	1		1
39. Miscellaneous	6		1
99. Missing	0		52

SOURCE: The classification schema for number of employees and region and the information about United States manufacturers was obtained from the Statistical Abstract of the United States (U.S. Department of Commerce 1979). The SIC codes are based on the Standard Industrial Classification Manual (Executive Office of the President 1972). Information about NAM members was obtained from that organization.

TABLE 2 (Continued)

	U.S. Manufacturers	NAM Members	Sample Respondents
Region			
North East	8	6	7
Middle Atlantic	25	14	15
East North Central	20	33	41
West North Central	7	7	9
South Atlantic	12	13	10
East South Central	5	5	4
West South Central	7	10	7
Mountain	3	3	1
Pacific	14	8	5
Missing	0	0	2

A brief look at the returns shows that over half the responding firms are small to mid-sized, employing less than 250 persons. Approximately 50 percent of the respondents omitted a SIC code for their firms. It is possible that they did not know their SIC code or had difficulty listing a single code to represent a diversified business. Of those who did indicate their SIC code, 13 percent were in fabricated metal and 9 percent were in machinery. All other categories reflected returns of between 0 and 4 percent of the respondents.

A major portion of the respondents, 41 percent, were from the East North Central states. The second highest representation, from the Middle Atlantic states, was substantially lower at 15 percent. The Mountain states were least represented at 1 percent. Slightly more than one-third of the firms are located in a small city or town and one-fourth are found in a medium-sized city (see table 3).

TABLE 3

RESPONDENTS BY LOCATION

Location	Percentage Respondents
In open country or farm area.	5
In a small city or town less, than 50,000 persons.	36
In a medium size city, over 50,000 and less than a half million persons.	26
In a suburb, near a large city with over a half million persons.	14
In a large city over a half million persons.	18
Missing	1

Estimates of percentages of employees who have had vocational training presented no surprises (table 4). As one would expect, skilled-blue-collar and clerical/secretarial level employees had the highest percentages, both slightly over 33 percent. The low end of the scale was occupied by employees at the unskilled-entry-blue-collar and service levels at about 10 percent each. Given that vocational enrollments are typically higher in trades and industry and office or business practice programs, these findings are expected.

TABLE 4

MEAN PERCENTAGE OF EMPLOYEES WITH VOCATIONAL TRAINING BY LEVEL

Level	Mean Percentage
Professional/Administrative	22
Clerical/Secretarial	36
Sales/Marketing	18
Skilled-Blue-Collar	35
Unskilled-Blue-Collar	14
Unskilled-Entry-Blue-Collar	11
Service	11

The kinds of skill training provided to employees who do not have a four year college degree are shown in table 5. Nearly 500 of the responding firms provide formal on-the-job training, and almost 350 provide off-site training or tuition reimbursement to their employees. Instructions directed the respondents to check any type of skill training their company provided. Some firms provide multiple forms of initial skill training, and other firms provide only one or no type of skill training.

Analysis of Data

Data analysis of the responses was completed by examining the frequency of responses to each survey question. Cross-tabulations of responses were also completed for selected items. The findings from the analysis and a discussion of results are presented in the results and discussion section.

TABLE 5

TYPES OF INITIAL SKILL TRAINING
OFFERED BY RESPONDENTS

Type of Training	Number
Before job-assignment training	122
Formal on-the-job training	499
Lecture series, seminars	159
Off-site training, tuition reimbursement	348
Apprenticeship	261
Organization does not provide initial skill training	157
Other	63

RESULTS AND DISCUSSION

The major findings from this study are highlighted by organizing information around key topics. The topics concern respondents' perceptions about vocational education, including their views about the outcomes or effects of vocational education, their involvement with vocational education, and their views about what vocational education should be doing and how it can be improved.

Opinions About Vocational Education

Respondents were asked to grade both high school and postsecondary vocational education in their community. In general, respondents awarded higher grades to the postsecondary level. As shown in figure 1, "C" was the most frequent grade given to the secondary level, and "B" was most often associated with postsecondary vocational education. The results of a recent Gallup poll (1981) of the public's opinions of the schools were similar to manufacturers' opinions about secondary vocational education.

Based on the results from these two studies it appears that the manufacturers' opinions about secondary vocational education are similar to the general public's views about public schools. Postsecondary vocational education, in the opinion of manufacturers, rates higher than secondary vocational education and higher than the general public's views about public schools. It may be that postsecondary vocational students have a more immediate fit into manufacturers' employment structure needs or that postsecondary vocational education is doing a better job.

More than half of the respondents said their companies benefited from vocational education (table 6). Approximately 40 percent saw a benefit in lower training costs, and 60 percent said that new employees with a vocational education background require less training than nonvocational graduates for the same type of job (tables 7 and 8).

TABLE 6

DOES YOUR COMPANY BENEFIT FROM VOCATIONAL EDUCATION?

Response	Percentage
Yes	57
No	16
Not sure	25
Missing	1

FIGURE 1

GRADING OF VOCATIONAL EDUCATION

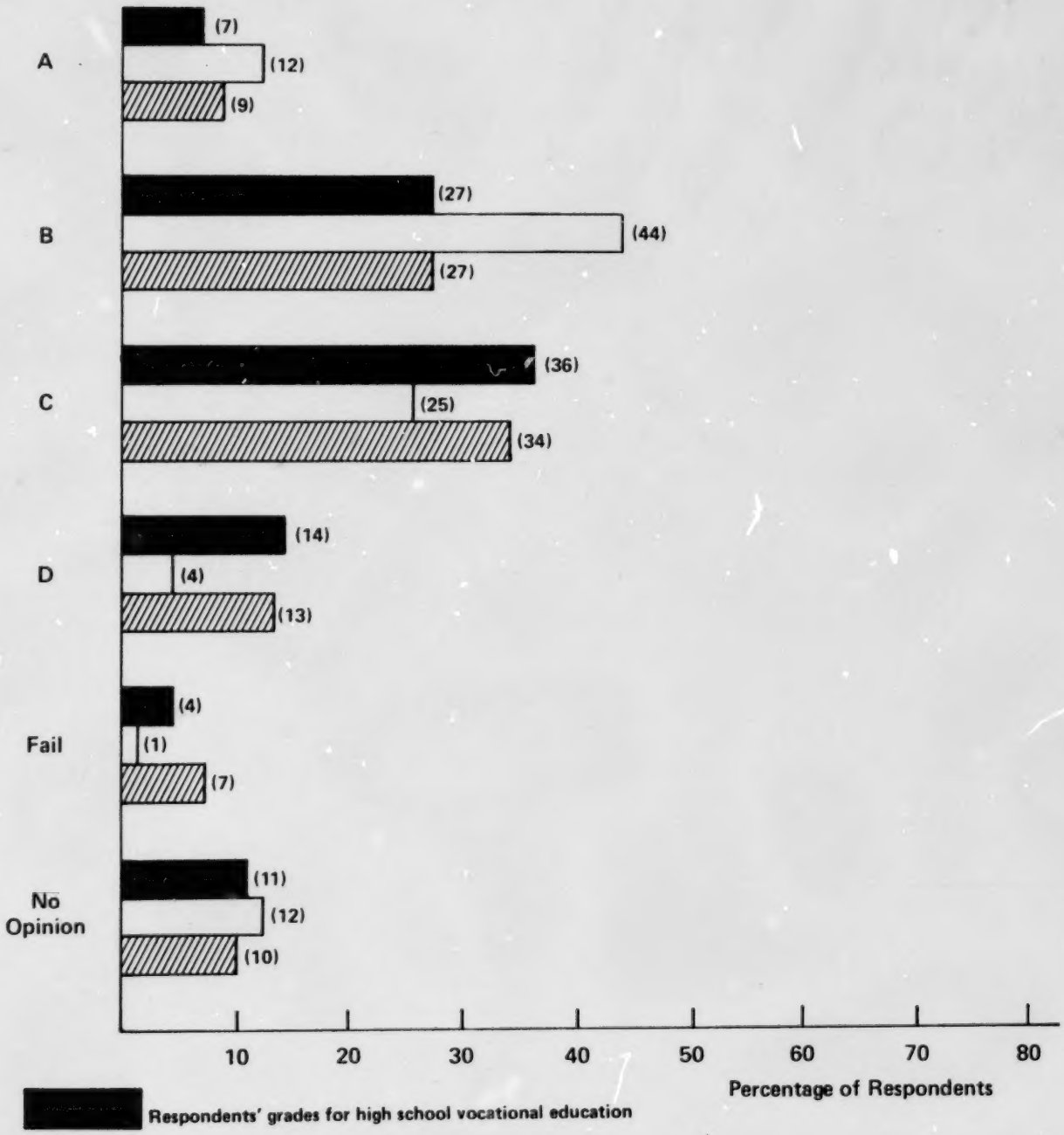

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TABLE 7

DOES YOUR COMPANY SAVE IN TRAINING COSTS BECAUSE OF VOCATIONAL EDUCATION?

Response	Percentage
Yes	39
No	24
Don't know	36
Missing	1

TABLE 8

TRAINING REQUIRED FOR EMPLOYEES WITH VOCATIONAL EDUCATION BACKGROUND

Response	Percentage
More training	5
Same amount of training	18
Less training	60
Don't know	16
Missing	2

Eighty-five percent of the manufacturers said they would hire a vocational education graduate rather than a nonvocational graduate for a job requiring less than a four-year degree (given sameness of age, sex, training experience, and so forth, among applicants). Only 4 percent said they would not (table 9).

TABLE 9

WOULD YOU HIRE A VOCATIONAL GRADUATE RATHER THAN A NONVOCATIONAL GRADUATE?

Response	Percentage
Yes	85
No	4
Don't know	11
Missing	1

The responses to several items concerning overall opinions of vocational education have generally suggested a more positive attitude by larger companies. It may be that smaller companies have fewer dealings with vocational education or that previous interactions have been less than satisfactory.

Involvement with Vocational Education

There are various ways in which vocational educators and employers can work together to improve the quality of training for students. The respondents were asked how they felt about six types of collaborative activities, assuming there were no legal constraints that limited such activities. The range of activities included providing work experience for students, instructors, or guidance counselors; sharing equipment; allowing released time for employees to teach vocational education courses; and using vocational education to retrain experienced workers. They were asked if they already had such arrangements, if they would be willing to make such arrangements, or if they preferred not to collaborate in the specified manner. Table 10 presents the data.

About one-fifth of the respondents are already involved in the provision of work experience for vocational education students. Another 53 percent are willing to collaborate in this fashion. Providing work experience for students is clearly the most acceptable form of involvement with vocational education as perceived by manufacturers. Along the same vein, providing work experience for instructors and guidance counselors was also viewed positively, though it is not currently practiced as extensively as the provision of work experience for students.

The collaborative arrangement least acceptable to most manufacturers is to allow equipment to be used at the work site for public vocational education training programs. Almost three-quarters of the respondents said they would not be willing to participate in such an activity.

Over all of the possible collaborative activities, larger companies had a slight tendency to be more involved, or be more willing to engage in a joint effort with vocational education. Similarly, those respondents who had indicated previously that they felt they "benefited" from vocational education, or that vocational education saved them training costs, more often indicated that they were already involved or were willing to become involved in a coperative effort with vocational education.

When comparing those companies that have some type of collaboration with those that do not by the grades they awarded to vocational education, there is some tendency for those already

TABLE 10

VIEWS ON COLLABORATION BY RESPONSE RATE PERCENTAGE

Type of Collaboration	Yes Quite Likely	Already have Such Arrangements	No Not Likely	No Response
Would you be willing to provide work experience for vocational education students?	53	21	21	5
Would you be willing to provide work experience for vocational education instructors such as a summer job to help them maintain up-to-date skills?	62	8	26	5
Would you be willing to provide work experience for guidance counselors to increase their awareness of the world of work?	57	4	32	7
Would you be willing to use vocational education to retrain your experienced workers?	56	9	29	6
Would you be willing to allow one or more of your employees released time to teach vocational education courses?	37	8	49	7
Would you be willing to allow your equipment to be used on your premises for public vocational education training programs?	20	4	72	5

having such arrangments to give higher grades. Such relationships cannot indicate cause and effect, but they suggest that increased contact with vocational education is associated with more positive attitudes.

One additional question about collaboration was asked of the manufacturers. They were asked to indicate what problems (if any) they had experienced that made it difficult for businesses to work with vocational education. Figure 2 presents the results of that question.

The most frequent problems of collaboration were inadequate planning and inflexible schedules. A problem with the quality of training was mentioned by almost one-fifth of the respondents also. Note that about 14 percent of the respondents felt that schools are not interested in working with business and industry.

What Should Vocational Education Be Doing

Two general ways in which the education system prepares high school youth for work are by providing employability skills training and occupational skills training. Employability skills training provides help in career decisionmaking, and skills in seeking/finding/holding jobs (e.g., resume writing, interviewing, attendance, punctuality, work attitude, and so forth). Occupational skills training provides technical and manual skills such as typing and machine shop work.

The respondents were asked which of three choices involving the two kinds of training offered the most effective mode for preparing high school youth for work--teaching either employability or occupational skills at the high school level singly, or offering both. As shown in figure 3, teaching both employability skills and occupational skills was preferred by almost three-fourths of the respondents. There was a tendency for the largest companies to agree to an even greater extent with this option. It appears that manufacturers do value occupational and employability skills training at the secondary level as a means of preparing youth for participation in the labor market.

The manufacturers were also requested to suggest how vocational education might be improved. Table 11 presents those results. For secondary level vocational education the improvement that elicited the most support, 63 percent, was to "stress teaching of basics (reading, writing, and arithmetic)." The next most often indicated item was to "ensure that individuals who do not go on to college have access to vocational education." Forty-two percent indicated agreement with that item. Closely following were "update vocational programs" and "provide work

FIGURE 2

PROBLEMS IN WORKING WITH VOCATIONAL EDUCATION
BY RESPONSE RATE

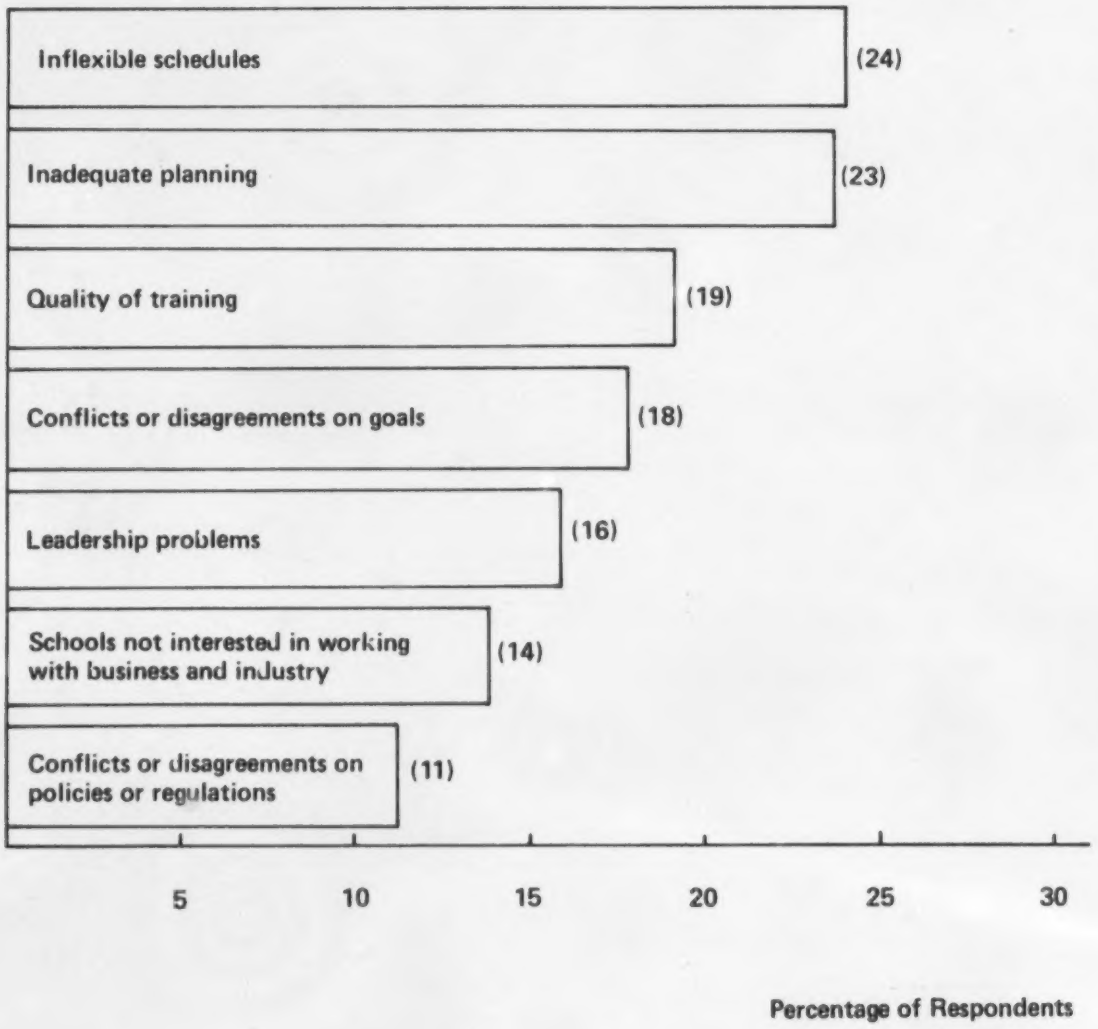
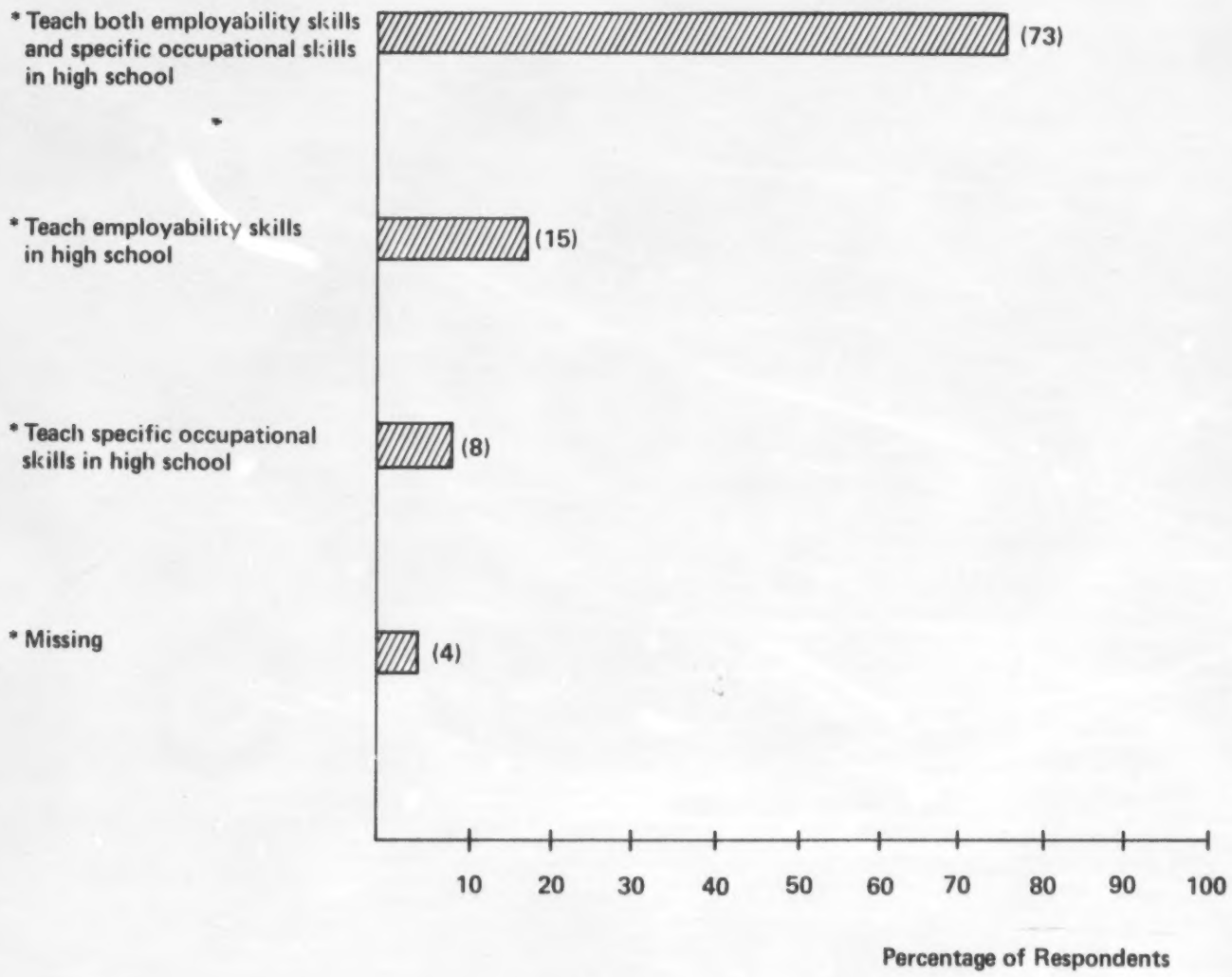


FIGURE 3

HOW SHOULD HIGH SCHOOL PREPARE YOUTH FOR WORK?



*Definitions

Employability Skills: Skills in such areas as career decision making; seeking, finding, and holding a job; resume writing; interviewing; attendance; punctuality; and work attitude.

Occupational Skills: Technical and manual skills such as typing and machine shop work.

TABLE 11

IMPROVEMENTS FOR SECONDARY AND POSTSECONDARY VOCATIONAL EDUCATION BY RESPONSE RATE

Possible Improvements	Secondary Percentage	Secondary Rank	Postsecondary Percentage	Postsecondary Rank
Increase the number of different kinds of vocational programs.	25	6	25	6
Update vocational programs.	39	3	35	4
Improve opportunities for minorities.	4	10	5	10
Ensure that individuals who do not go on to college have access to vocational education.	42	2	26	5
Provide work experience for vocational students.	38	4	43	1
Actively support economic development in the community.	7	8/9	10	9
Improve placement efforts.	17	7	24	7
Stress teaching of basics (reading, writing, and arithmetic).	63	1	40	2
Involve employers more in vocational programming.	33	5	36	3
Increase collaborative retraining efforts.	7	8/9	10	8

experience for vocational students" at about the 40 percent level.

At the postsecondary level the most frequently indicated improvement was to "provide work experience for vocational students." However, teaching of the basics was indicated by almost 40 percent of the respondents for this level also. Apparently manufacturers believe a significant portion of high school graduates can not adequately perform the tasks of reading, writing, and computing. Involving employers in vocational programming and updating vocational programs ranked next at about 35 percent.

For both the secondary and postsecondary levels the improvement of opportunities for minorities was rated low as an action to improve the quality of vocational education. Similarly, few of the respondents selected support for economic development or increased collaborative retraining efforts as areas of vocational education that most need to be improved. These results should not be interpreted as meaning the respondents do not endorse these activities. They may think that vocational education is already doing an adequate job or that other improvements are more important.

Respondents were also asked to indicate their agreement or disagreement with proposed changes in vocational education (table 12). The respondents were in greatest agreement with increasing employability skills training at the high school level, confirming their earlier view that employability skills training is important. Agreement was also high concerning increasing vocational courses at the postsecondary level, involving employers in the evaluation of vocational education, and ensuring that adults have access to training for job reentry.

The changes that elicited the lowest agreement were "increase public funds for job placement programs..." and " provide public funds for expansion of vocational educational programs for females in traditionally male occupations and vice versa." These changes had 18 percent and 23 percent agreement respectively. Apparently most manufacturers and personnel directors do not see the provision of public funds for overcoming occupational sexual stereotyping and for job placement as important tasks of vocational education.

Summary

This study has described some aspects of manufacturers' views of vocational education. The information will be used to assist policymakers and administrators in their planning as well as to help them outline future directions for and relationships with vocational education.

TABLE 12

VIEWS ABOUT PROPOSED CHANGES BY RESPONSE RATE

Proposed Change	Percentage Agree	Disagree	Undecided	Missing
Increase employability skills training at the high school level.	89	3	4	4
Increase vocational education courses in community or junior colleges.	82	4	10	5
Increase employers' involvement in the evaluation of vocational programs.	81	2	12	6
Insure that adults have access to training for re-entry skills for the job market.	80	4	12	5
Expand use of private sector personnel as resources for vocational education classroooms.	65	6	25	5
Expand use of public vocational education funds for training/ retraining of employees at the job site.	30	36	28	6
Provide public funds for expansion of vocational education programs for females in traditionally male occupations, and vice-versa.	23	43	28	6
Increase public funds for job placement programs as part of vocational education.	18	53	23	6

APPENDIX

SURVEY FORM

NATIONAL ASSOCIATION OF MANUFACTURERS
SURVEY OF MEMBERS' OPINIONS
ABOUT VOCATIONAL EDUCATION

INSTRUCTIONS:

Please help us by completing this survey form about public vocational education, which should take about 8-10 minutes of your time. Base your responses on your entire firm if you have only a single facility. Base your responses on the largest plant if you have several facilities. Your responses do not commit you to any future activities. Return the form in the enclosed envelope to the National Association of Manufacturers (NAM) as soon as possible. Identity of responding companies will be known only to NAM.

We appreciate your assistance and time.

In Cooperation With:

The National Center for Research in Vocational Education
The Ohio State University

A. BACKGROUND INFORMATION

1. City: _____

2. State: (use two-letter state abbreviation) _____

3. Title or position of person completing this survey: (Check one closest to your title.)

(1) ☐ *President or CEO*
(2) ☐ *V-P Industrial Relations*
(3) ☐ *Personnel Manager*
(4) ☐ *Human Resource Director*
(5) ☐ *Employment and Training Manager*
(6) ☐ *Other* _____

4. What is the approximate number of employees in your firm during the last 12 months? (Check one.)

(1) ☐ *under 20*
(2) ☐ *20-99*
(3) ☐ *100-249*
(4) ☐ *250-999*
(5) ☐ *1000 plus*

5. The SIC code number (Standard Industrial Classification) describing the major activity of your business establishment is:

_____

6. Check the category below which best describes where your main plant is located:

(1) ☐ *In open country or farm area.*
(2) ☐ *In a small city or town less than 50,000 persons.*
(3) ☐ *In a medium size city, over 50,000 and less than a half million persons.*
(4) ☐ *In a suburb, near a large city with over a half million persons.*
(5) ☐ *In a large city over a half million persons.*

7. What is your best estimate of the current unemployment rate where your main plant is located?

_____ %

8. Vocational education is commonly defined as a training program (below the 4-year college degree) whose primary purpose is to provide students with specific occupational skills.

About what percentage of your employees at each skill level would you estimate have had vocational education training?

(1) _____ % – *Professional-Administrative*
(2) _____ % – *Clerical-Secretarial*
(3) _____ % – *Sales-Marketing*
(4) _____ % – *Skilled Blue-Collar*
(5) _____ % – *Unskilled Blue-Collar*
(6) _____ % – *Unskilled Entry Blue-Collar*
(7) _____ % – *Service*

9. What kinds of initial skill training, if any, does your company provide employees who do not have a 4-year college degree? (Check as many as apply.)

(1) ☐ *Before job-assignment training*
(2) ☐ *Formal on-the-job training*
(3) ☐ *Lecture series, seminars*
(4) ☐ *Off-site training, tuition reimbursement*
(5) ☐ *Apprenticeship*
(6) ☐ *Organization does not provide initial skill training*
(7) ☐ *Other: (please describe)* _____

B. WHAT IS YOUR OPINION OF VOCATIONAL EDUCATION?

10. Students often are given the grades A, B, C, D, and F (Fail) to denote the quality of their work. Suppose *high school* vocational education in your community were graded in the same way. What grade would you give *high school* vocational education? (Check one.)

(1) ☐ *A*
(2) ☐ *B*
(3) ☐ *C*
(4) ☐ *D*
(5) ☐ *F (Fail)*
(6) ☐ *No opinion*

11. What grade would you award *community or junior college* vocational education? (Check one.)

(1) ☐ *A*
(2) ☐ *B*
(3) ☐ *C*
(4) ☐ *D*
(5) ☐ *F (Fail)*
(6) ☐ *No opinion*

12. If you assigned a grade below A, what are the most important things high school and community or junior college vocational education have to do to improve their grade? (Check three in each column.)

High School	Community or Junior College	
(1) ☐	(11) ☐	*Increase the number of different kinds of vocational programs.*
(2) ☐	(12) ☐	*Update vocational programs.*
(3) ☐	(13) ☐	*Improve opportunities for minorities.*
(4) ☐	(14) ☐	*Insure that individuals who do not go on to college have access to vocational education.*
(5) ☐	(15) ☐	*Provide work experience for vocational students.*
(6) ☐	(16) ☐	*Actively support economic development in the community.*
(7) ☐	(17) ☐	*Improve placement efforts.*
(8) ☐	(18) ☐	*Stress teaching of basics (reading, writing, and arithmetic).*
(9) ☐	(19) ☐	*Involve employers more in vocational programming.*
(10) ☐	(20) ☐	*Increase collaborative retraining efforts.*

(21) ☐ *Other suggestions for high school:* _____

_____

(22) ☐ *Other suggestions for community or junior college:* _____

_____

13. Does your company benefit from vocational education? (Check one.)

(1) ☐ *Yes. How?* _____
(2) ☐ *No*
(3) ☐ *Not sure*

14. Considering new employees who work in the same types of jobs, how much on-the-job training is required by those with a vocational education background as compared to those without such training? (Check one.)

(1) ☐ *More training*
(2) ☐ *Same amount of training*
(3) ☐ *Less training*
(4) ☐ *Don't know*

15. Does public vocational education save your organization money in training costs? (Check one.)

(1) ☐ *Yes. If possible, estimate how much annually: $* _____
(2) ☐ *No*
(3) ☐ *Don't know*

16. For a job requiring less than a four-year college degree, would you hire a vocational education graduate rather than a non-vocational graduate (all else being equal: age, sex, training, experience, etc.)? (Check one.)

(1) ☐ *Yes*
(2) ☐ *No. Why not?* _____
(3) ☐ *Don't know*

C. WAYS YOUR FIRM MAY WORK WITH SECONDARY AND POSTSECONDARY VOCATIONAL EDUCATION

Assume there are no legal constraints with local statutes or union contracts: (Check one per question.)

	Yes, quite likely	Already have such arrangements	No, not likely
17. Would you be willing to allow your equipment to be used on your premises for public vocational education training programs?	☐	☐	☐
18. Would you be willing to provide work experience for vocational education students?	☐	☐	☐
19. Would you be willing to provide work experience for vocational education instructors such as a summer job to help them maintain up-to-date skills?	☐	☐	☐
20. Would you be willing to provide work experiences for guidance counselors to increase their awareness of the world of work?	☐	☐	☐
21. Would you be willing to allow one or more of your employees released time to teach vocational education courses?	☐	☐	☐
22. Would you be willing to use vocational education to retrain your experienced workers?	☐	☐	☐

23. Please indicate any problems that you have experienced or that you think make it difficult for business to work with high school or community/junior college vocational education. (Check as many as apply.)

(1) ☐ *Schools are not interested in working with business and industry.*
(2) ☐ *Conflicts or disagreements on goals.*
(3) ☐ *Leadership problems.*
(4) ☐ *Conflicts or disagreements on policies or regulations.*
(5) ☐ *Inadequate planning.*
(6) ☐ *Inflexible schedules.*
(7) ☐ *Quality of training.*
(8) ☐ *No opinion.*
(9) ☐ *Other problems. Please describe:* _____

_____

D. WHAT DO YOU THINK VOCATIONAL EDUCATION SHOULD BE DOING?

24. Two ways in which the educational system prepares high school youth for work are: (1) specific occupational skills training and (2) employability skills training. Specific occupational skills training provides technical and manual skills such as typing and machine shop work. Employability skills training provides help in career decision-making, and skills in seeking/finding/holding jobs (resume writing, interviewing, attendance, punctuality, work attitude, etc.).

    Which one of the following do you think would be most effective in preparing youth for work? (Check one.)

    (1) ☐ *Teach employability skills in high school.*
    (2) ☐ *Teach specific occupational skills in high school.*
    (3) ☐ *Teach both employability skills and specific occupational skills in high school.*

25. Several changes are under consideration in vocational education. For each of the following proposed changes, indicate whether you agree, disagree, or are undecided.

	Agree	Disagree	Undecided
(1) *Increase employability skills training at the high school level.*	☐	☐	☐
(2) *Increase vocational education courses in community or junior colleges.*	☐	☐	☐
(3) *Expand use of private sector personnel as resources for vocational education classrooms.*	☐	☐	☐
(4) *Provide public funds for expansion of vocational education programs for females in traditionally male occupations, and vice-versa.*	☐	☐	☐
(5) *Increase public funds for job placement programs as part of vocational education.*	☐	☐	☐
(6) *Insure that adults have access to training for re-entry skills for the job market.*	☐	☐	☐
(7) *Increase employers' involvement in the evaluation of vocational education programs.*	☐	☐	☐
(8) *Expand use of public vocational education funds for training/retraining of employees at the job site.*	☐	☐	☐

Thank you very much for your cooperation. Please return this survey to NAM in the envelope which is provided.

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